Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (cancelled)
2. (cancelled)
3. (cancelled)
4. (cancelled)
5. (cancelled)
6. (cancelled)
7. (cancelled)
8. (cancelled)
9. (cancelled)

10. (currently amended) A radio, comprising:

a receiver for receiving a radio signal; and

a velocity estimation block coupled to the receiver for estimating the velocity of the radio, the velocity estimation block including:

an autocorrelation block coupled to the receiver for determining the autocorrelation of the received signal using a predetermined lag;

a power block coupled to the receiver for determining the power of the received signal; and

a Bessel lookup table coupled to the autocorrelation and power blocks for estimating the velocity of the radio[[.]];

wherein the velocity estimation block estimates the velocity of the radio using the equation

$$v = \lambda \frac{InverseJ_0\left(\frac{E[r(t)r(t-\tau)]}{E[r(t)^2]}\right)}{2\pi\tau},$$

where,

$E[r(t)r(t-\tau)]$	Autocorrelation of the received signal,
τ	Lag associated with the correlation,
$E[r(t)^2]$	Signal power,
J_0	Bessel function of order 0,
v	Velocity of the radio communication device,
λ	Wavelength of the signal; and
Inverse $J_0()$	values found in the inverse Bessel function table.

11. (original) A radio as defined in claim 10, wherein the Bessel lookup table comprises an inverse Bessel lookup table.

12. (original) A radio as defined in claim 11, wherein the autocorrelation determined by the autocorrelation block is divided by the power determined by the power block in order to determine the inverse Bessel function of $2\pi f_d \tau$, where f_d is the Doppler frequency caused by the movement of the radio and τ is the predetermined lag.

13. (original) A radio as defined in claim 12, wherein the predetermined lag is stored in the radio.

14. (original) A radio as defined in claim 13, wherein the inverse Bessel lookup table is stored in the radio.

15. (original) A radio as defined in claim 14, comprises a cellular telephone.

16. (original) A radio as defined in claim 1, wherein the velocity estimation block comprises a Digital Signal Processor performing velocity estimation calculations.

17. (original) A radio as defined 1, wherein the lag (τ) is chosen from the interval $0.0 \leq \tau \leq \dfrac{\lambda}{\pi\, v_{max}}$, where v_{max} is the maximum velocity of the mobile radio and λ is the wavelength of the received signal.

18. (currently amended) A method for estimating the velocity of a radio communication device, comprising the steps of:

receiving a signal at the radio communication device;

computing the power of the received signal;

computing the autocorrelation of the received signal using a single lag associated with the correlation; and

using an inverse Bessel function table and the computed power and autocorrelation to provide an estimate of the velocity of the radio communication device[[.]];

wherein the single lag and the inverse Bessel function table are stored in the radio communication device; and

wherein the method is performed using a controller that uses the equation:

$$v = \lambda \frac{InverseJ_0\left(\frac{E[r(t)r(t-\tau)]}{E[r(t)^2]}\right)}{2\pi\tau},$$

where,

$E[r(t)r(t-\tau)]$	Autocorrelation of the received signal,
τ	Lag associated with the correlation,
$E[r(t)^2]$	Signal power,
J_0	Bessel function of order 0,
v	Velocity of the radio communication device,
λ	Wavelength of the signal; and
Inverse $J_0()$	values found in the inverse Bessel function table.

19. (cancelled)

20. (cancelled)